3.0 AFFECTED ENVIRONMENT

3.10 Air Quality

3.10.1 Background

Under the Clean Air Act as Amended (1990), National Ambient Air Quality Standards have been developed by the EPA. These standards are used to classify areas as to whether they are in attainment, in non-attainment, or are unclassified for any of the air quality standards. Areas that are classified as non-attainment areas are required to prepare and implement a State Implementation Plan that identifies and quantifies sources of emissions and provides a strategy to reduce emissions. Under the Clean Air Act conformity rules (CAA 176(c) and 40 CFR part 51 subpart W), activities on BLM-managed lands in a non-attainment area must conform to the applicable State Implementation Plan.

The air quality of a particular locale is based on the amount of pollutants emitted and dispersed, and climatic conditions that may reduce or enhance the formation of pollutants. In the Coachella Valley, the South Coast Air Quality Management District (SCAQMD), is the responsible agency for monitoring air quality, and developing and enforcing regulations intended to achieve State and Federal air quality standards. California has also set statewide emission limitations for odor or unhealthful emissions, visible emissions, open burning, sandblasting, gasoline vapors, and incineration of toxics.

Suspended particulate matter is the most serious air quality issue faced by the region, which occasionally exceeds both state (>50 g/m3 or 50 micrograms per cubic meter) and federal (>150 g/m3) standards for PM10. PM10 refers to small suspended particulate matter, 10 microns or less in diameter, which can enter the lungs. These small particles can be directly emitted into the atmosphere as a by-product of fuel combustion; through abrasion, such as wear on tires or brake linings; or through wind erosion of soil. Mining operations, OHV use, and grazing all contribute to PM10 levels. They can also be formed in the atmosphere through chemical reactions. Carcinogens and other toxic compounds can stick to the particle surfaces and enter the lung. PM10 is reduced directly by controls on fugitive dust and indirectly by controls on all other pollutants which contribute to the formation of particles.

Another measurement of air quality is the level of ozone, which is formed by photochemical reactions between oxides of nitrogen and volatile organic compounds (VOC). VOCs are formed from the incomplete combustion of fuels and from evaporation of organic solvents. Elevated ozone levels in the air we breathe (as opposed to the upper atmosphere where it protects us from harmful radiation) result in reduced lung function, particularly during vigorous physical activity. Reducing ozone levels involves controlling both NOx and VOC emissions. NOx controls were described above. Typical VOC controls include reducing the VOC content of paints and solvents,

and controlling fumes from gasoline pumping, auto body painting, furniture finishing, and other operations that involve organic chemicals and solvents.

3.10.2 Coachella Valley Portion of the CDCA Planning Area

The Coachella Valley is located within the Salton Sea Air Basin (SSAB), a geographic area regulated by SCAQMD. The Salton Sea Air Basin is generally bounded on the west by the San Jacinto Mountains, and on the east by the eastern edge of the Coachella Valley. The SCAQMD is under a legal obligation to make and enforce air pollution regulations. These regulations are primarily meant to ensure that the surrounding (or ambient) air will meet National Ambient Air Quality Standards and state air quality standards for concentration and duration for which air pollutants may negatively affect health. SCAQMD also has broad authority to regulate toxic and hazardous air emissions, and these regulations are enforced in the same manner as those which pertain to the ambient air quality standards. In addition, SCAQMD must meet California standards for hydrogen, sulfide, sulfates, and vinyl chloride, as well as state standards for visibility.

SCAQMD currently monitors ambient air quality, including PM_{10} concentrations, at two air monitoring stations in the Coachella Valley (Palm Springs and Indio). These ambient air standards are health-based and concern the following five air contaminants: ozone, nitrogen dioxide, carbon monoxide, and fine particulate matter (PM10 and PM2.5). These standards are designed to protect the most sensitive persons from illness or discomfort with a margin of safety. The Indio site has been operational since 1985, and the Palm Springs site has been operational since 1987. The particulate sampling frequency at both monitoring stations is once every three days.

Based on monitoring reported in the 1996 Coachella Valley State Implementation Plan, approximately 53 tons of PM10 were released into the atmosphere in Coachella Valley on an average day in 1995. Of these, one percent was caused by fuel combustion, waste burning and industrial processes. Man-made and natural dust-causing activities, such as agricultural tilling in fields, construction and demolition operations, or driving on paved or unpaved roads account for 96%. Less than three percent of Coachella Valley's emissions are caused by mobile source tailpipe and brake/tire wear emissions.

Expansion of mining area and other potential dust-generating activities on BLM lands have the potential to generate emissions of various types. Within the Coachella Valley there is a natural sand migration process which has direct and indirect effects on air quality. Each year, winter rains cause erosion of adjacent mountains, and water run-off into the northern part of the Coachella Valley produces huge deposits of newly-created sand in that area. During the spring months, persistent, strong winds carry the sand methodically down the valley. Called "blowsand", this natural sand migration process produces PM10 in two ways: (1) by direct particle erosion and fragmentation (natural PM10); and (2) by secondary effects, such as sand deposits on road surfaces which can be ground into PM10 by moving vehicles, and resuspended in the air by those vehicles (man-made PM10).

In the spring and early summer months, meteorological conditions favor the development of strong winds. Seasonally, as the deserts begin to heat up, surface pressures are systematically lower. This creates a "vacuum-like" effect, whereby cooler, ocean-modified air is pulled toward the deserts. As the air is channeled through Banning Pass, which separates the Coachella Valley from the South Coast Air Basin, it accelerates, creating winds which frequently exceed 40 miles per hour (mph). On occasion, winds exceed 60 mph and widespread natural dust storms develop. Desert visibility, which typically exceed 35 miles, can be reduced to less than a mile by the blowsand. On other occasions, summer thunderstorms generate strong gusts and produce large-scale dust storms. Under both of these meteorological conditions, the natural large-scale effects over the desert overwhelm local man-made dust-producing conditions. Such events, which occur approximately 10 to 15 days per year, are considered "natural events" by EPA, and are excluded from violation status determinations.

3.10.3 Current Regulatory Status in Coachella Valley

In November 1990, amendments to the federal Clean Air Act were signed into law, setting into motion new statutory requirements for attaining federal National Ambient Air Quality Standards for PM10. All areas in the United States that were previously designated as federal non-attainment areas for PM10, including the Coachella Valley, were initially designated as "moderate" PM10 non-attainment areas. Under Section 189(a) of the Clean Air Act, revisions to the State Implementation Plans for PM10 were due by November 15, 1991, incorporating "reasonably available control measures" for PM10 and indicating an attainment date. In response to these requirements, the South Coast Air Quality Management District adopted the "State Implementation Plan for PM10 in the Coachella Valley" (1990 CVSIP) in November 1990. The 1990 CVSIP identified candidate control measures and demonstrated attainment of the NAAQS for PM10 by the year 1995, one year after the statutory limit for moderate non-attainment areas. The Clean Air Act, Section 188(b) specifies that any area that cannot attain the standards by December 1994 would subsequently be re-designated as a "serious" non-attainment area.

In January 1993, the U.S. Environmental Protection Agency completed its initial re-designation process, and included the Coachella Valley among five nationwide areas re-designated as "serious" effective February 8, 1993. Section 189(b) of the Clean Air Act further specifies that a State Implementation Plan revision is due within 18 months of the re-designation (August 8, 1994). The revision must assure that "best available control measures" will be implemented and a demonstration of attainment will be submitted within four years of the re-designation date (February 8, 1997). In response to the Clean Air Act requirements for "serious areas", the South Coast Air Quality Management District prepared a State Implementation Plan revision (1994 CVSIP) that identified candidate “best available control measures” for implementation prior to February 8, 1997.

The Clean Air Act also allows an extension of the attainment date for up to five years provided that: (1) all previous state implementation plan (SIP) commitments have been implemented; (2) a demonstration that attainment by 2001 is not practicable; (3) documentation that all feasible Most Stringent Measures (MSM) are being implemented; and (4) a demonstration that the expected attainment date is the most expeditious date practicable.

Section 107 (d)(3)(E) of the Clean Air Act states that an area can be re-designated to attainment if, among other requirements, the U.S. Environmental Protection Agency (EPA) determines that the National Ambient Air Quality Standards have been attained. The EPA guidance further states that a determination of compliance with the National Ambient Air Quality Standards must be based on three complete, consecutive calendar years of quality-assured air quality monitoring data. In applying U.S. EPA's Natural Events Policy, the1996 Coachella Valley State Implementation Plan determined that the Coachella Valley had not violated either the 24-hour or annual average PM10 standards during the three calendar years 1993 through 1995. Accordingly, the South Coast Air Quality Management District requested a re-designation of the Coachella Valley to attainment for PM10.

From 1999 through 2001, however, PM10 dust levels rose sufficiently to exceed the annual average PM10 standard of 50 g/m^3, and standards for ozone. The Indio monitoring site exceeded the PM10 annual average standard from 1999 to 2001. Palm Springs, on the other hand, is within both standards. Special monitoring at other sites confirmed that PM10 standards are exceeded throughout Coachella Valley. The region continues to be designated a “serious” non-attainment area for PM10. Should the region continue to fall short of federal PM10 standards, the U.S. EPA could impose more stringent regulations or sanctions on local jurisdictions.

In an effort to remedy this situation, the South Coast Air Quality Management District developed “Guidelines for Dust Control Plan Review in the Coachella Valley” (2001) which are intended to provide guidance for activities that are required to prepare a fugitive dust control plan. The 2002 Coachella Valley PM10 State Implementation Plan (2002 CVSIP) has been prepared for the planning area which identifies sources of PM10 and control measures to reduce emissions. There also are a set of rules (400 series) designed to limit area and point source particulate emissions and fugitive dust in the Coachella Valley. In developing an air quality management strategy to meet State and Federal standards on public lands, the BLM took into consideration guidelines, rules and State Implementation Plans prepared by the South Coast Air Quality Management District. A description of the BLM’s air quality management strategy, and measures embodied in the 2002 CVSIP are provided in Appendix C.

3.10.4 Morongo Valley Portion of the CDCA Planning Area

The Morongo Valley portion of the CDCA Plan Amendment area, which is located in San Bernardino County, falls under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD). Like the Coachella Valley, this region is currently

designated a "nonattainment area" under state and federal ozone and PM_{10} ambient air quality standards.[1] These designations include a "severe-17" classification for federal ozone standards under the Clean Air Act, which means the region must come into compliance with federal ozone standards by November 15, 2007 (17 years from the date the federal Clean Air Act was enacted). The region is designated an "attainment area" for all other criteria pollutants, including carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead.

PM_{10} violations throughout the Mojave Desert Air Basin are primarily attributed to heavy fugitive dust sources in and around urbanized areas and dust generated from large-scale high wind events.[2] Major dust sources in urbanized areas include unpaved road travel, off-highway vehicle use, wind erosion of unpaved roads and disturbed soils, and construction and demolition activity. In an effort to bring the region into compliance with federal PM_{10} standards, the MDAQMD adopted a "Federal Particulate Matter Attainment Plan" in 1995, which sets forth a control strategy plan for the entire District. The strategy is aimed at reducing fugitive dust emissions from unpaved road travel, construction/demolition activities, disturbed areas, and industrial activities. All development in the District must comply with the provisions of this Plan and other applicable MDAQMD emissions requirements.

[1] "California Environmental Quality Act and Federal Conformity Guidelines," Mojave Desert Air Quality Management District and Antelope Valley Air Quality Management District, December 1999.
[2] "Mojave Desert Planning Area Federal Particulate Matter (PM_{10}) Attainment Plan," Mojave Desert Air Quality Management Plan, July 31, 1995.